Patent Claims

1. Hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b);

1.1 with a primary impeller (2; 2.2; 2.3a; 2.3b; 2.3c; 2.4; 2.4a; 2.4b) and a secondary impeller (3; 3.2a; 3.3a; 3.3b; 3.3c; 3.4; 3.4a; 3.4b), which together form a working chamber (4; 4.2; 4.3a; 4.3b; 4.3c; 4.4; 4.4a; 4.4b);

1.2 with means for the influencing of the transmission ratio of the hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b), in particular fort he influencing of the circulation flow in the working chamber (4; 4.2; 4.3a; 4.3b; 4.3c; 4.4; 4.4a; 4.4b), comprising at least an element (5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) which forms an interference or baffle region, that extends at least partly into the working chamber (4; 4.2; 4.3a; 4.3b; 4.3c; 4.4; 4.4a; 4.4b);

characterized by the following feature:

1.3 the element (5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) which forms the interference or baffle region is displaceable in the axial direction in the working chamber (4; 4.2; 4.3a; 4.3b; 4.3c; 4.4; 4.4a; 4.4b).

2. Hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) according to claim 1, characterized by that the element which forms the interference or baffle region (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b; 2; 2.2; 2.3a; 2.3b; 2.3c; 2.4; 2.4a; 2.4b; 3; 3.2a; 3.3a; 3.3b; 3.3c; 3.4; 3.4a; 3.4b; 4; 4.2; 4.3a; 4.3b; 4.3c; 4.4; 4.4a; 4.4b; 5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) is implemented as a ring shaped disk element.

3. Hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) according to claim 2, characterized by that the element which forms the interference or baffle region is implemented as a washer segment (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b; 2; 2.2; 2.3a; 2.3b; 2.3c; 2.4; 2.4a; 2.4b; 3; 3.2a; 3.3a; 3.3b; 3.3c; 3.4; 3.4a; 3.4b; 4; 4.2; 4.3a; 4.3b; 4.3c; 4.4; 4.4a; 4.4b; 5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5).

4. Hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) according to one of the claims 2 or 3, characterized by that the front sides, which point away from each other, of the ring shaped disk element (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b; 2; 2.2; 2.3a; 2.3b; 2.3c; 2.4; 2.4a; 2.4b; 3; 3.2a; 3.3a; 3.3b; 3.3c; 3.4; 3.4a; 3.4b; 4; 4.2; 4.3a; 4.3b; 4.3c; 4.4; 4.4a; 4.4b; 5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) are arranged parallel to each other.

5. Hydrodynamic clutch (1.5) according to one of the claims 2 or 3, characterized by that the front side, which points in between the impellers (25, 35) to the parting plane, is constructed with an inclination over at least a part of its radial extension in the radial direction to the central diameter of the working chamber (8.5).

6. Hydrodynamic clutch (1.5) according to claim 5, characterized by that the front side, which points in between the impellers (2.5; 3.5) to the parting plane, is constructed uneven, in particular curved, in the radial direction to the central diameter of the working chamber (8.5).

7. Hydrodynamic clutch (1; 1.2; 1.3a; 1.4a) according to one of the claims 1 to 6, characterized by that the element (5; 5.2; 5.3a; 5.4a) which forms an interference or baffle region is arranged, viewed in the radial direction, in the region of the external diameter (d_{A4}) of the working chamber (4.3b, 4.4b) and comprises an internal diameter (d_{I5}) that is larger than the internal diameter (d_{I4}) of the working chamber (4; 4.2; 4.3a; 4.4a).

8. Hydrodynamic clutch (1.3b; 1.4b) according to one of the claims 1 to 6, characterized by that the element (5.3b; 5.4b) which forms an interference or baffle region is arranged in the region of the internal diameter (d_{I4}) of the working chamber (4.3b, 4.4b) and by that its external diameter (d_{A5}) is smaller than the external diameter (d_{A4}) of the working chamber (4.3b; 4.4b).

9. Hydrodynamic clutch (1; 1.3a; 1.3b) according to one of the claims 1 to 8, characterized by that the element (5; 5.3a; 5.3b) is assigned to one of the two impellers (2; 2.3a; 2.3b; 3; 3.3a; 3.3b), whereby the impeller comprises a blade carrying part (8; 8.3a; 8.3b) which contains a, in the axial direction displaceable, and the flow circulation guiding, wall region (7) and by that the element (5; 5.3a; 5.3b) which forms the baffle and interference region forms a structural unit with this wall region (7).

10. Hydrodynamic clutch (1; 1.3a; 1.3b) according to claim 9, characterized by that the element (5; 5.3a; 5.3b) which forms the baffle or interference region forms with the axially displaceable wall region (7) an integral unit.

11. Hydrodynamic clutch (1; 1.2; 1.3c; 1.4; 1.5) according to one of the claims 1 to 8, characterized by that the element (5; 5.2; 5.3c; 5.4; 5.5) which forms the interference or baffle region is constructed as a separate component.

12. Hydrodynamic clutch (1; 1.2; 1.3c; 1.4; 1.5), according to claim 11, characterized by the following features:

12.1 the element (5; 5.2; 5.3c; 5.4; 5.5) which forms the interference or baffle region is assigned to an impeller (2; 2.2; 2.3c; 2.4; 2.5; 3; 3.2; 3.3c; 3.4; 3.5);

12.2 the impeller (2; 2.2; 2.3c; 2.4; 2.5; 3; 3.2; 3.3c; 3.4; 3.5) contains a blade carrying part;

12.3 the blade carrying part (8; 8.2; 8.3c; 8.4; 8.5) extends, viewed in the radial direction, always only over a part of the extension of the individual blades in this direction.

12.4 the blades of the blading (14) freely project in the radial direction in the region of the internal diameter (d_{I4}) or the external diameter (d_{A8}) of the working chamber (4; 4.2; 4.3c; 4.4; 4.5) in the region that is free from the blade carrying part (8; 8.2; 8.3c; 8.4; 8.5) with its in radial direction oriented end regions (13.1)

12.5 the element which forms the interference or baffle region (5; 5.2; 5.3c; 5.4; 5.5) contains on the external circumference or the inner circumference guiding slits (16) for the guidance of the blades of the blading (14) which are arranged adjacent to each other in the circumferential direction.

13. Hydrodynamic clutch (1; 1.2; 1.3c; 1.4; 1.5), according to claim 11, characterized by the following features:

13.1 the element (5.3a; 5.3c; 5.4; 5.5) which forms the interference or baffle region is assigned one of the impellers (2.3; 2.3a; 3.3a; 2.3c; 3.3c; 2.5; 3.5);

13.2 the impeller contains a blade carrying part;

13.3 the blade carrying part (8.3a; 8.3c; 8.4) and the blading (14.3a; 14.3c; 14.4), viewed in the radial direction, are characterized at the internal diameter (d_I) or the external diameter (d_A) of the respective impeller (2.3; 2.3a; 3.3a; 2.3c; 3.3c; 2.5; 3.5) by a constant diameter over the axial extension, whereby this is formed by the shaping of a blade part segment with the pertinent sub region of the blade carrying part.

14. Hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) according to one of the claims 11 to 13, characterized by that the element (3; 3.2a; 3.3a; 3.3b; 3.3c; 3.4; 3.4a; 3.4b) which forms an interference or baffle region is guided at the respective impeller (2; 2.2; 2.3a; 2.3b; 2.3c; 2.4; 2.4a; 2.4b; 3; 3.2a; 3.3a; 3.3b; 3.3c; 3.4; 3.4a; 3.4b) or by an element that is coupled torque proof to it.

15. Hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) according to one of the claims 11 to 13, characterized by that the element (5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) which forms an interference or baffle region is guided by an element which rotates relative to the impeller (2; 2.2; 2.3a; 2.3b; 2.3c; 2.4; 2.4a; 2.4b; 3; 3.2a; 3.3a; 3.3b; 3.3c; 3.4; 3.4a; 3.4b) or by an element that is coupled torque proof to it.

16. Hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) according to one of the claims 11 to 13, characterized by that the element (5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) which forms an interference or baffle region is guided at a stationary component or casing (21, 24, 25) or by an element which is coupled torque proof to an impeller (21; 24; 25; 2; 2.2; 2.3a; 2.3b; 2.3c; 2.4; 2.4a; 2.4b; 3; 3.2a; 3.3a; 3.3b; 3.4b).

17. Hydrodynamic clutch (1; 1.2; 1.3b; 1.4b; 1.5; 1.6) according to the claims 1 to 16, characterized by that the element (5; 5.2; 5.3b; 5.4b; 5.5; 5.6) which forms the interference or baffle region is assigned to the primary impeller (2; 2.2; 2.3b; 2.4b; 2.5; 2.6).

18. Hydrodynamic clutch (1.3a; 1.4a) according to one of the claims 1 to 17, characterized by that the element (5.3a; 5.4a) which forms the interference or baffle region is assigned to the secondary impeller (3.3a; 3.4).

19. Procedure for the influencing of the torque that a hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) can absorb, whereby the hydrodynamic clutch (1; 1.2; 1.3a; 1.3b; 1.3c; 1.4a; 1.4b) contains at least an element which forms a baffle or interference region for the circulation flow, which extends at least partly into the working chamber (4; 4.2; 4.3c; 4.4; 4.5), characterized by that the element (5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) which forms the baffle or interference region is displaceable in the axial direction in the working chamber (4; 4.2; 4.3c; 4.4; 4.5).

20. Procedure according to claim 19, characterized by that the element (5; 5.2; 5.3a; 5.3b; 5.3c; 5.4a; 5.4b; 5.5) that forms the baffle or interference region at high slippage values is active in the region of the parting plane in the working chamber and the influencing can be described as a function of the position of the element that forms at least a baffle or interference region.